

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

CLEANUP AND ABATEMENT ORDER NO. 89-48

**G.T.F. PROPERTIES
AND
SHELL OIL COMPANY
PARCEL NO. 535-065-06-00
BLOCK 91, LOTS G and H
SAN DIEGO COUNTY**

California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board) finds that:

1. The subject site is a 100-foot-square lot comprising the northwest corner of the intersection of Second Avenue and Market Street in downtown San Diego. The site is within the San Diego Mesa Hydrographic Subunit (8.2) of the Coronado Hydrographic Unit (8.0).
2. The subject site is presently owned by G.T.F. Properties, P.O. Box 15, San Diego, California, 92112-0015, a successor in title to Albert A. and Jessie T. Frost.
3. Shell Oil Company (Shell) operated a gasoline service station at the site under lease from the property owners Albert A. and Jessie T. Frost from June 1949 to September 1972. During the term of the lease, Shell installed and maintained underground storage tanks at the subject site. The tanks, pumps, distribution lines, and other service station facilities were the sole property of Shell. At the termination of the lease in 1972, Shell had the underground tanks removed. Since termination of the lease, the property has been used as a parking lot.
4. The site is a part of the Marina Redevelopment Project in the center city area of the City of San Diego. The project is being administered by the Redevelopment Agency of the City of San Diego. The Centre City Development Corporation, Inc. (CCDC) is a nonprofit corporation established by the City of San Diego to administer downtown redevelopment projects, including the Marina Redevelopment Project.
5. In 1987, CCDC discovered a subsurface hydrocarbon plume near the intersection of Market Street and First Avenue. The subsurface plume is composed of petroleum hydrocarbon with a carbon chain which ranges from gasoline to diesel and appears to be an accumulation of several coalescing sources. A 0.1 foot thickness of petroleum hydrocarbon was measured in a ground-water monitoring well adjacent to the southern boundary of the subject property and therefore the subject site is on the northern margin of this hydrocarbon plume.
6. By letter dated November 23, 1987 to Shell; and by letters dated July 22, 1988 and December 22, 1988 jointly to Shell and G.T.F. Properties, Regional Board staff requested both parties to conduct a subsurface investigation.
7. In response to our letters of July 22, 1988 and December 22, 1988, the Regional Board received a technical subsurface investigation report dated January 30, 1989 prepared by LeRoy Crandall and Associates for G.T.F. Properties.

8. According to the report, the boring drilled through a former tank backfill area encountered hydrocarbon soil contamination, characterized as degraded leaded gasoline, from approximately 9 to 20 feet below the surface. At nine feet, 1500 milligrams per kilogram (mg/kg) of total petroleum hydrocarbon was present in the tank backfill area. The report also gave the following concentrations in the soil:

<u>Constituent</u>	<u>Concentration</u>
Benzene	0.80 mg/kg
Toluene	37 mg/kg
Total Xylene	193 mg/kg
Ethylbenzene	30 mg/kg

These constituents are considered toxic and hazardous by the United States Environmental Agency (EPA) and California State Department of Health Services (DOHS).

9. Presently, the ground-water gradient is to the south. No floating "free" product has been found in any on site ground-water monitoring wells, but 0.2 feet of free product was measured in a monitoring well located approximately 5 feet south of the property line. Product in the off-site well appears to be similar in carbon chain range to product found in soils under the former tank site. Since significant soil contamination exists within the former backfill area of the tank and the off-site well immediately adjacent to the southern property line shows free product, the Leroy Crandall report dated January 30, 1989 concludes that, "The geometry and content of the soil contamination encountered indicates that a release of hydrocarbon product has occurred in the vicinity of the former Shell Oil Company tanks and that a downward-percolating vadose zone plume reached the historic water table." (p. 9 of the report).
10. The *Comprehensive Water Quality Control Plan Report, San Diego Basin (9)* (Basin Plan) was adopted by this Regional Board on March 17, 1975; approved by the State Water Resources Control Board on March 20, 1975; and updated by the Regional Board on February 27, 1978; March 23, 1981; January 24 and October 3, 1983; August 27, 1984; and December 16, 1985. The updates were subsequently approved by the State Board.
11. The Basin Plan established no beneficial uses for surface or ground waters in the San Diego Mesa Hydrographic Subunit.
12. The Basin Plan established the following beneficial uses for San Diego Bay:
- Industrial Service Supply
 - Navigation
 - Water Contact Recreation
 - Non-Contact Water Recreation
 - Ocean Commercial And Sport Fishing
 - Saline Water Habitat
 - Preservation of Rare and Endangered Species
 - Marine Habitat
 - Fish Migration
 - Shellfish Harvesting

13. The quality of the ground water of the San Diego Mesa Hydrographic Subunit and of the San Diego Bay water is subject to the provisions of the State Water Resources Control Board's Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality Waters in California*. This policy is incorporated in the Basin Plan. Under the terms and conditions for Resolution No. 68-16, the existing (predischARGE) quality of ground water in the San Diego Mesa Hydrographic Subunit and the surface water of San Diego Bay must be maintained unless it is demonstrated that a decrease in water quality (1) will be consistent with maximum benefit to the people of the state, (2) will not unreasonably affect beneficial uses, and (3) will not result in water quality less than that prescribed in the Basin Plan or other adopted policies.

14. The Basin Plan contains the following prohibition:

"Dumping or deposition of oil, garbage, trash or other solid municipal, industrial or agricultural waste into natural or excavated sites below historic water levels or deposition of soluble industrial wastes at any site is prohibited, unless such site has been specifically approved by the Regional Board for that purpose."

The subject site has not been specifically approved by the Regional Board for the above purpose.

15. Section 13304(a) of the California Water Code states the following:

"Any person who has discharged or discharges waste into the waters of this state in violation of any waste discharge requirement or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, cause or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board clean up such waste or abate the effects thereof or, in the case of threatened pollution or nuisance, take other necessary remedial action."

16. G.T.F. Properties has permitted petroleum hydrocarbons to be discharged or deposited on the site where such wastes have been and probably will be discharged into the ground water. The on-going discharge of petroleum hydrocarbons to the ground water has resulted in pollution of the ground water and threatens to pollute waters of San Diego Bay for beneficial uses listed in Finding No. 12. Additionally, the on-going discharge violates Resolution 68-16 because the Regional Board finds that the decrease in ground-water quality is not consistent with the maximum benefit to the people of the state.

17. These discharges have polluted and threaten to further pollute ground water of the basin and threaten to pollute surface water of San Diego Bay.

18. Regional Board files indicate that the ground water has a total dissolved solids (TDS) concentration that ranges from 1,085 to 3,080 parts per million (ppm) and, under the federal definition, qualifies as a potential underground source of drinking water. The United States Environmental Protection Agency's (EPA) definition of an "underground source of drinking water" is found in Title 40, Code of Federal Regulations (40 CFR), Section 146.3, and states the following:

"Underground source of drinking water (USDW) means an aquifer or its portion:

- (1) (i) Which supplies any public water system; or
- (ii) Which contains a sufficient quantity of ground water to supply a public water system; and
 - (a) Currently supplies drinking water for human consumption; or
 - (b) Contains fewer than 10,000 mg/l total dissolved solids; and
- (2) Which is not an exempted aquifer."

As defined under 40 CFR Section 141.2(e) a "public water system" means:

"a system for the provision to the public of piped water for human consumption, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year."

Presently, the ground water is not being used as a drinking water source. However, some time in the future this water source may be utilized. The discharge of petroleum hydrocarbons degrades the existing water quality and renders it unusable for drinking water unless the ground water is treated.

- 19. The ground water beneath the site is in continuity with waters of the bay. The petroleum hydrocarbon concentrations are hazardous to marine life and may impact other beneficial uses of San Diego Bay, as described in Finding No. 12, if allowed to migrate to the bay.
- 20. Shell has demonstrated negligence in the discharge of petroleum hydrocarbons to the environment as follows:
 - a. Single-walled steel tank construction which is subject to corrosion,
 - b. No cathodic protective coating of the tanks,
 - c. No early warning site monitoring to detect any discharges,
 - d. No tank over-spill protection, and
 - e. The lack of thorough and adequate tank tests, given the age (29 years old) of the steel tanks.
- 21. Shell both installed and removed the underground fuel tanks at the site during Shell's leasehold. The existence of soil and ground-water contamination at the site indicates that the tanks and/or associated piping leaked during Shell's leasehold. Petroleum hydrocarbons have been and are being discharged to the ground water. These discharges constitute a continuing public nuisance in violation of Civil Code Section 3490. The discharges also violated Health and Safety Code Section 5411 and California Water Code Section 13304(a).
- 22. Civil Code Section 3490 prohibits the creation or continuation of a public nuisance. The courts have held that water pollution constitutes a public nuisance. In addition, Health and Safety Code Section 5411 prohibits the discharge of waste which will result in pollution, contamination, or nuisance. The past and on-going subsurface discharge of petroleum hydrocarbons has resulted in pollution and in threatened pollution.

23. For reasons explained above, the Regional Board finds that G.T.F. Properties and Shell Oil Company have discharged and are discharging petroleum hydrocarbons at the site in violation of Section 13304(a) of the California Water Code.
24. Regional Board considers this property one of several properties which have contributed to the ground-water plume for which Cleanup and Abatement Orders will be issued to collectively mitigate the contamination.
25. This enforcement action is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et. seq.) in accordance with Section 15321, Chapter 3, Title 14, California Code of Regulations.

IT IS HEREBY ORDERED, that pursuant to Section 13304 of the California Water Code, G.T.F. Properties and Shell Oil Company (hereinafter the dischargers) shall comply with the following directives:

1. The dischargers shall conduct a subsurface investigation and submit the results in a report to this office, no later than August 31, 1989, which characterizes the vertical and horizontal extent of petroleum hydrocarbon contamination in the soil and ground water (both free product and dissolved) resulting from the unauthorized release from the former service station at the subject site. The report shall contain the following information:
 - a. A site map showing the location of all borings and monitoring wells.
 - b. Shell Oil Company shall provide a true and accurate map which depicts all past tank locations and all associated piping and any underground utilities that might act as conduits along which petroleum hydrocarbons could migrate.
 - c. The water levels and fuel product thicknesses in all wells on or immediately adjacent to the property (to the nearest 0.01 foot).
 - d. A site map showing the contours and/or boundary of the soil contamination.
 - e. A site map showing the hydrologic contours and the boundary of the free product plume and the dissolved product ground-water contamination.
 - f. All soil samples should be analyzed for the following:
 - (1). Benzene, Toluene, Ethylbenzene, and total Xylenes (using EPA method 8020),
 - (2). Total Petroleum Hydrocarbons [using EPA method 418.1 and California Department of Health Services (CDOHS) method],
 - (3). Organic Lead (using CDOHS method),
 - (4). Polynuclear Aromatic Hydrocarbons (using EPA method 8100).
 - g. All ground-water samples should be analyzed for the following:
 - (1). Benzene, Toluene, Ethylbenzene, and total Xylenes (using EPA method 8020)
 - (2). Total Petroleum Hydrocarbons (using CDOHS method)

(3). Total Lead (using EPA method 7421)

(4). Polynuclear Aromatic Hydrocarbons (using EPA method 8100).

2. The dischargers shall submit a remedial action strategy proposal, no later than October 16, 1989, which addresses the removal and/or treatment of the soil contamination.
3. The dischargers shall submit a remedial action strategy proposal, no later than November 30, 1989, which addresses the removal of any free product and the removal and/or treatment of the ground-water contamination.
4. The dischargers shall take:
 - a. Effective remedial action to immobilize and remove any free product plume.
 - b. Effective remedial action to immobilize and clean up petroleum hydrocarbon dissolved in the ground water to the following levels:

<u>Constituent</u>	<u>Cleanup Level</u>
Benzene	40 ppb
Toluene	5,000 ppb
Ethylbenzene	430 ppb
Total Xylenes	1,750 ppb

- c. Effective remedial action to remove and/or treat all soil contamination to a level which would prevent leaching of petroleum hydrocarbons to the ground water which would cause contamination in the ground water to exceed the cleanup levels stated in Directive 4(b) above.
5. The dischargers shall submit monitoring reports to this office on a quarterly basis until, in the opinion of the Regional Board Executive Officer, the site has been cleaned up. The monitoring reports shall describe the progress made in the cleanup operations and shall demonstrate that the petroleum hydrocarbon discharged from the former service station has been and remains immobilized. The quarterly monitoring reports shall include, but not be limited to, the following information:
 - a. A map of the site with hydrologic contours showing the ground-water flow pattern and the locations of all wells.
 - b. A map of the site showing the boundary of the free petroleum hydrocarbon product plume (if any).
 - c. The water levels and product thickness (if any) in all of the wells (to the nearest 0.01 foot).
 - d. A description of the remedial actions employed by the dischargers.

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The quarterly monitoring reports shall be submitted to this office in accordance with the following schedule:

<u>Reporting Period</u>	<u>Due Date</u>
June, July, August	September 30
September, October, November	December 30
December, January, February	March 30
March, April, May	June 30

6. The dischargers shall dispose of all ground water and/or soil polluted with petroleum hydrocarbons in accordance with all applicable local, state, or federal laws and regulations.
7. After the dischargers demonstrate to the Regional Board Executive Officer's satisfaction that the final cleanup levels have been achieved throughout the soil and ground-water contamination zones, the dischargers shall continue to monitor the ground water and submit quarterly monitoring reports in accordance with Directive No. 5 of this Order for a period of one year. If at any time during this post-cleanup monitoring the data indicate that the final cleanup levels have not been maintained, the dischargers shall immediately resume appropriate remedial cleanup actions. If the final cleanup levels have not been exceeded for the year of monitoring, then no further monitoring will be required.

Ordered by: Ladin H. Delaney
Ladin H. Delaney
Executive Officer

Dated: May 19, 1989

JPA